Environment Canada | Environnement Canada

Conservation and Protection | Conservation et Protection

Conservation and Protection
Atlantic Region
1986/87
Fiscal Year Report

Canada

89-04923/

Introduction

This report has been prepared for the benefit of Atlantic Canadians and others who have an interest or stake in conserving and protecting the environmental assets of this unique area of Canada. As the Atlantic Region Director General (RDG) of the new organization that resulted from the union of the former Conservation and Protection Services of Environment Canada, I feel a responsibility to report on our inaugural year's accomplishments, and to describe the main goals and strategies which we will pursue in the coming years.

The environment of the Atlantic Region as described in our report, "Environmental Quality in the Atlantic Region 1985", continues to be affected by the consequences of a resource based economy, despite marked improvement over the past two decades. We have clearly made some progress, perhaps the most important accomplishment is the beginning of the resolution of one of our most serious environmental problems, the Sydney Tar Ponds. Equally clearly, we still have considerable work to do, our coastal waters, for example are pivotal to the Atlantic economy yet continue to receive unacceptable levels of chemical and biological pollution. Nevertheless, there is a slow but steady trend toward improvement, and it is gratifying to see the concurrent growth of a strong public environmental ethic which is beginning to be felt at all levels of decision making.

This report begins with a description of the major organizational units that make up Conservation and Protection (C&P), Atlantic Region. We will discuss their areas of responsibility and the resource base and expenditure patterns under which they operate. The following two sections will highlight accomplishments during our first term: the fiscal year from April 1/86 to March 31/87.

Co-operative agreements on reducing acid rain, beginning the clean-up of the Sydney Tar Ponds, waterfowl conservation and habitat protection efforts; water quality monitoring agreements, off-shore environmental protection initiatives; joint arrangements to study regional water resource issues, examine toxic chemical usage, and look at nuisance bird populations; the publication of the second regional report on environmental quality; and the acquisition of high quality environmental information exemplify a few of the areas of achievement for C&P in 1986/87. The report concludes with a look at future directions for C&P. The dedication and hard work of our staff, which made the accomplishments of last year possible, gives me the confidence to predict that our future goals will also become reality.

I hope that readers of this report will come away with a better understanding of C&P, and the realization that our organization does not, and cannot, operate alone. Protecting and conserving our environment is a shared responsibility and we depend on the co-operation of governments, private organizations and concerned citizens to develop, and put in place, programs which will truly reflect the needs of Atlantic Canadians.

Jim Vollmershausen

Director General (Atlantic)

Conservation and Protection

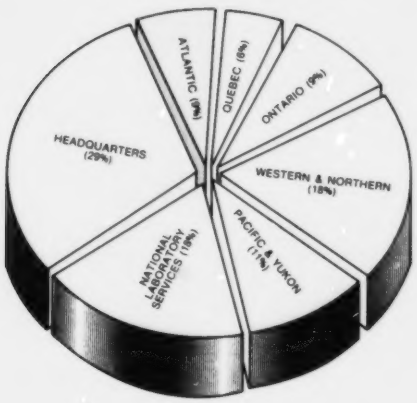
Organization

Conservation and Protection, the Atmospheric Environment Service and Parks Canada deliver Environment Canada's programs to the public. The mandate of the Department comes from the *Government Organization Act* (1979) and covers a broad range of responsibilities. Conservation and Protection has been assigned two primary roles.

- **The conservation of renewable resources, which involves long-term renewable resource management (including the federal government's involvement in the planning and implementation of water resources development, water quality and quantity research, land use research, assessment of the impacts of federal programs, and the operation of a national land data bank), conservation and protection of migratory birds and research to improve wildlife management techniques.**

- **The protection and enhancement of environmental quality, which involves working, either directly or with others, to anticipate and prevent threats to environmental quality resulting from human activities, and to correct environmental problems caused by such activities. There is also an added responsibility for programs to promote good environmental practices in such areas as, hazardous wastes disposal, chemical use in industry, environmental impact assessment, and environmental emergencies.**

C & P NATIONAL
1986-87 TOTAL PERSON YEAR RESOURCES



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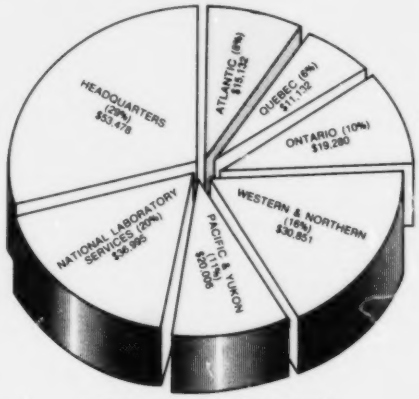
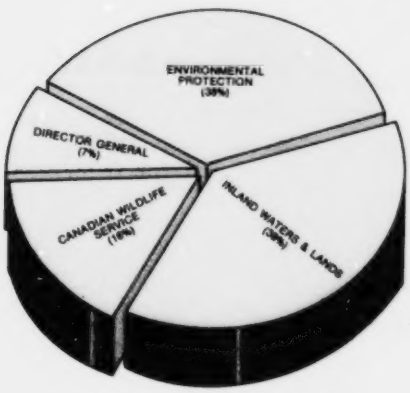


NOTE: VALUES IN THOUSANDS OF DOLLARS

C & P ATLANTIC REGION
1986-87 PERSON YEAR RESOURCES



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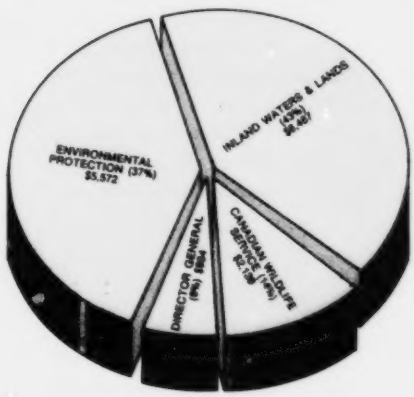
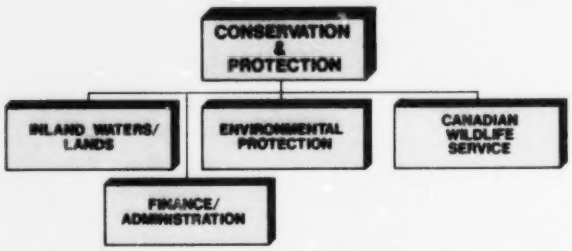
1986-87 DOLLAR RESOURCES



NOTE: VALUES IN THOUSANDS OF DOLLARS

Prior to the establishment of Conservation and Protection (C&P), federal programs that responded to these areas of responsibility were managed by either the Environmental Protection Service or the Environmental Conservation Service (Inland Waters and Lands Directorate, and the Canadian Wildlife Service). Consolidation of these Services into C&P in 1986 built on a tradition of good co-operation among these agencies by streamlining administrative procedures without disrupting operational roles and responsibilities. Inland Waters and Lands, the Canadian Wildlife Service and Environmental Protection now work in a more coordinated fashion to achieve a variety of conservation and protection objectives.



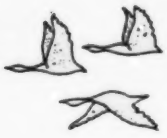
The conservation of our freshwater and land resources is the long term goal of Inland Waters and Lands (IWL). This involves handling federal responsibilities under the *Canada Water Act*, the *Boundary Waters Treaty Act*, and the *International River Improvements Act*. In this regard IWL arranges and administers federal-provincial agreements to reduce flood damage and improve river-basin planning and management, and manages and administers a network of water data collection and information facilities. IWL also takes part in land use programs arising from the *Government Organization Act* and related directives such as the Federal Policy on Land Use.

Federal wildlife conservation and protection programs continue to be managed by the Canadian Wildlife Service (CWS). The agency carries out federal duties under the *Migratory Birds Convention Act*, the *Canada Wildlife Act*, the *Game Export Act* and a variety of international and federal-provincial agreements. In the case of migratory birds, this is achieved by developing and enforcing regulations, by encouraging the management and protection of wetlands and other habitats, and by conducting research and population surveys. Co-operation with provincial, national, and international organizations helps to ensure a coordinated effort to preserve wildlife and in particular, those animals threatened with extinction or of international and national importance.

Federal obligations under the *Environmental Contaminants Act*, Section 33 of the *Fisheries Act*, the *Clean Air Act*, the *Ocean Dumping Control Act* and Sections 18 and 19 of the *Canada Water Act* have been assigned to Environmental Protection (EP). EP also provides advice on the environmental aspects of legislation administered by other federal departments such as the *Motor Vehicle Safety Act*, the *Pest Control Products Act* and the *Transport of Dangerous Goods Act*. This is accomplished through a variety of programs and regulatory activities. The ultimate goal of EP is to anticipate, prevent and correct the adverse environmental effects of economic development, pollution discharges, hazardous substances and toxic chemical spills. EP also coordinates Environment Canada's 'state of the environment' reporting procedures, as well as the Department's involvement in several joint Canada-US initiatives.

C&P corporate programs are generally developed and carried out by staff in the Regional Director General's Office, although the RDG will also delegate corporate tasks to staff throughout the organization. The Director General, along with the Regional Directors for CWS, IWL and EP, and other senior administrative officials, make up the C&P Management Committee. Chaired by the RDG, this Committee approves all major policy or administrative decisions that affect regional operations.

Conservation Activities



Migratory Birds

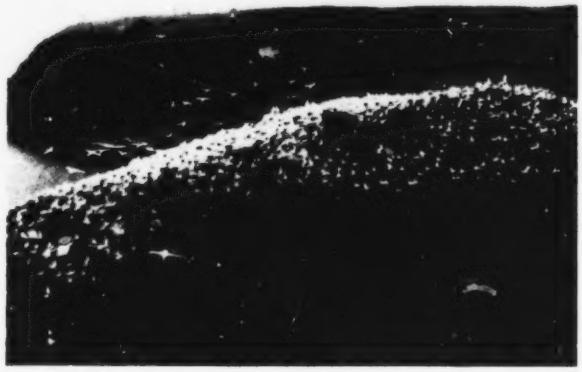
Effective conservation of migratory birds depends on population surveys to record numbers, research to identify limiting factors and the ways in which populations respond to them, and on the development of better techniques for preserving habitats important to birds throughout the year. These requirements apply to all groups of birds, whether hunted or not, and to both rare and common species. A major goal of our migratory bird programs is to ensure the conservation of all species which come under federal jurisdiction. This often involves co-operative arrangements with provinces and private organizations.

1986/87 Highlights:

- The North American Waterfowl Management Plan is being put into place through federal-provincial management plans and related agreements.
- Banding of migratory waterfowl in the Atlantic Provinces was carried out by C&P and provincial agencies, with support from the Canada-U.S Atlantic Flyway Council's

co-operative banding fund and a great deal of help from volunteers. More than 3,500 ducks were banded and released as part of a co-operative program to improve management practices through a better understanding of migration pathways, harvest patterns and habits of waterfowl populations in the Atlantic Flyway.

- Efforts to re-establish the endangered Peregrine Falcon in the Bay of Fundy area received a boost in the form of a five-year commitment by the World Wildlife Fund of $35,000 annually to help in the release of 30 birds each year. More than 20 young peregrines were released in 1986. The first adult pair were seen around the nesting area in the spring of 1986.



- A $400,000 grant was obtained from Wildlife Habitat Canada (WHC) to purchase additional land in the Portobello National Wildlife Area of New Brunswick in order to protect additional habitat in this unique site. Waterfowl habitat protection and management involves many groups, as most wetlands are not under federal jurisdiction. In this respect, co-operative agreements on the protection and upgrading of wetland habitats have been, or are being negotiated between C&P, WHC, Ducks Unlimited Canada, and the governments of the Atlantic Provinces.

- Under the Ramsar Convention (established at Ramsar, Iran, in 1971), wetlands can be recognized as being of international importance to waterfowl. Negotiations with Atlantic provincial governments have led to the proposal to list several areas as Ramsar sites. Shepody Bay, N.B., submitted to the Convention, was also chosen by federal and provincial officials to become Canada's first Hemispheric Shorebird Reserve. These listings serve to encourage the co-operative protection of wetland sites which are of international significance.

- Large, localized populations of certain birds may cause problems for man — and for other birds. In 1986-87, our staff compiled and examined data on the numbers of large gulls and problems attributed to them. They also undertook a review of possible control techniques and management strategies. This is a first step towards effective management of this particular group of "nuisance" birds.

- Predation on eggs and ducklings of the Common Eider duck by gulls puts additional pressure on a species that is already heavily hunted in Newfoundland and Nova Scotia. A pamphlet on the distribution, life history, and population biology of eiders was prepared and distributed. An appreciation of the life cycle of these beautiful birds may help reduce the numbers taken by man. This would contribute to the recovery of the once significant Newfoundland population.

- Gulls also have adverse effects on terns, including the rare Roseate Tern. Fewer than 125 pairs breed in Nova Scotia. As a result of a review carried out for C&P, the Committee on Status of Endangered Wildlife in Canada decided to designate the species as threatened in Canada. This will alert conservation groups and agencies to the fact that a special effort is now needed to protect dwindling populations of these birds.

- Using funds obtained under the Canada-U.S. Black Duck Joint Venture Program to supplement C&P resources, a population monitoring survey of breeding waterfowl was begun in the Atlantic Provinces. The survey is essential for evaluating the effects of our harvest management actions.

- A Maritime wetlands inventory was completed. Maps in this series provide information on wetland location, size, classification and value throughout the Maritimes.

Land and Freshwater Resources

The lakes, rivers and groundwater in Atlantic Canada are important sources of drinking water, and are also used extensively for recreation, transportation, industrial processing, power generation, livestock watering, irrigation and fishing. Wetland areas provide feeding and breeding sites for waterfowl as well as a habitat for the development of fish. Our land resource is the basis for a variety of activities, ranging from food production, forestry, and mineral and energy extraction to settlement and recreation. Managing this vital heritage in a sustainable fashion is important to the continued economic and cultural prosperity of Atlantic Canada.

1986/87 Highlights:

- The first year of the Canada-Newfoundland Water Quality Monitoring Agreement has proven successful. This is the first such agreement in Atlantic Canada and represents a major commitment by both parties toward the acquisition of essential water quality information on a cost-effective basis.

- Routine water quality and quantity monitoring programs were carried out by C&P staff at various locations. Data from more than 4,000 water samples and 223 flow monitoring stations were processed and supplied to a wide variety of water use agencies, consultants and private interest groups for use in water research and management activities.

- Agreement in principal was obtained from Newfoundland to begin development of water quality objectives for the Exploits River basin in 1987. Standards such as these are needed to plan and assess the environmental implications of economic development.

- Construction began on the Port aux Basques water treatment system. C&P looks after Canada's role in this project, which involves over $6 million in federal funding. As a result of this undertaking, town residents will soon be drinking water free of colour, organic contaminants and disease organisms, long term problems in this important entrance to Newfoundland.

- Land use changes, in and around Halifax, were mapped to provide statistics on the loss of prime rural land to urbanization. Information such as this is of importance to both provincial and municipal planners.

- New techniques for land use monitoring, using data from a new French satelite (SPOT) were tested in the Truro area of Nova Scotia. If they prove successful C & P will be able to collect such data faster, and at a reduced cost.

- Land use trends in the Tantramer and Shepody marshlands were mapped and recorded in the Canada Land Data System. This type of information will be used to develop designation programs that help to conserve these important wildlife habitats.

- A report was produced giving details on water quality and quantity, use patterns and anticipated demands in the St. Croix River basin. This document gives area resource managers a valuable overview of water use problems and opportunities in this important international river basin.

- Soil erosion problems and solutions were evaluated for the Wilmot River basin in Prince Edward Island. C&P is working towards a plan for the Wilmot basin that will highlight the environmental and economic benefits of good soil and water conservation practices.

- An important agreement was negotiated with Prince Edward Island to study groundwater, estuaries, and surface water problems in that province (a 3 year program valued at $1 million). This will be the first subsidiary document under the Canada - P.E.I. Memorandum of Understanding on Conservation and Development, scheduled for signing next fiscal year. These arrangements represent a commitment, by both parties, to maximize the exonomic benefits of the province's water resources in a manner that will not jeopardize the unique, environmental heritage which they support.

- A major one-year project was begun with the Province of New Brunswick to evaluate the effectiveness of the water quality data collection network in that province.

- A multi-disciplinary study of water resources in the St. Croix River basin was initiated. The study will examine land use practices, economic and social factors, and water quality and quantity problems, within the basin.

- Flood-risk mapping for Rushoon, Nfld. was completed. This will help provide guidance for the protection of future flood plain development in this community.

- Flooding in Maritime river basins is a continuing problem. Provision of accurate forecasts about the timing, and extent of these floods is important for reducing the overall economic impact of such events. A comparison was made of the predicted and actual spring 1986 flooding in Saint John N.B. and a detailed forecasting manual was prepared. This will help improve the accuracy of future flood forecasts, not only around Saint John, but throughout the entire region.

Marine Resources

Atlantic commercial fisheries, including shellfish, are one of the mainstays of our regional economy. The conservation of healthy and productive marine ecosystems is vital to the continuation of this industry. This is especially true

for coastal regions — including estuaries, salt marshes, tidal flats, bays, gulfs and inlets — which are not only highly productive marine nurseries, but are also extremely vulnerable to damage from human activity.

1986/87 Highlights:

- As part of Canada's ongoing responsibilities under the Canada/U.S. Bilateral Shellfish Agreement, and as a means of protecting the health of consumers, C&P staff surveyed more than a dozen shellfish growing areas around Atlantic Canada. Reports were released on the bacteriological conditions at these locations for use by industry, government agencies and the general public. Locations which are found to have high levels of disease causing agents are closed to harvest until the problem is corrected.

- C&P played a key role in the preparation of a national action plan for dealing with priority issues in Canada's marine environments. Our management team will make use of this plan to direct a variety of regional initiatives aimed at conserving our aluable marine resources.

- Discussions were held with federal departments, the province of Nova Scotia and the Cape Breton Development Corporation to fund an integrated resource management program for the Bras d'Or Lakes. It is hoped that this program will supply much needed direction for all parties and help avoid future conflicts in the use of the lakes' resources or their watersheds.

Environmental Quality

In the last two decades Atlantic Canadians have become increasingly aware of the importance of the natural environment to their health and economic well-being. But what, exactly, is the state of our environment? To answer this difficult question C&P and other Environment Canada Services bring together items of information from other federal departments, provincial agencies and non-government organizations on the major factors influencing environmental quality. This information is then used to assess and report on the 'state of the environment' in Atlantic Canada.

1986/87 Highlights:

- The second Environmental Quality Report for Atlantic Canada was released in December 1986. The report uses illustrations, graphs, photographs and non-technical narrative to highlight positive and negative trends in environmental quality in the region.

- Work was begun on a status and priority report on marine environmental quality in Canada, due for completion in 1987. The report will identify those issues that deserve increased co-operation among federal and provincial agencies. Planning was also started on an international conference on marine environment quality set for early 1988, in Halifax.

- Working with provincial agencies, C&P efficiently operated a network of twenty-nine urban air quality monitoring stations. Information from these stations is used to determine trends in air quality and alert authorities to any problems. As well, the information provides a good indication of how current emission controls are working.

Protection Activities

Environmental Assessment

Environmental assessment is used to anticipate and prevent the negative effects of human activities on ecosystems on which we depend for our health and economic well-being. For C&P this involves evaluating proposals that are initiated by the federal government, and on occasion, providing technical guidance in this area to provincial or private sector developers.

1986/87 Highlights:

- More than fifty development proposals in the areas of forestry, mining, transportation and energy were examined to see that appropriate environmental protection measures were taken. Recommendations on protection techniques were used successfully by federal and provincial agencies, as well as private sector developers, in the design, construction, operation and abandonment phases of regional projects.

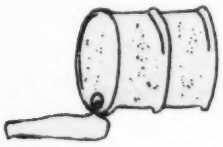
- Public Works Canada awarded contracts to study the feasibility of constructing a fixed crossing between New Brunswick and Prince Edward Island. C&P is part of the

federal team examining this proposal. A working group has been formed within C&P to make sure that environmental concerns are properly addressed.

- The Maritime Provinces have a plentiful supply of coal but little domestic oil production. To reduce dependency on imported oil, several oil-fired electricity-generating stations are scheduled for conversion to coal. C&P took an active part in the review of plans for the Coleson Cove, N.B. and Pt. Tupper N.S. conversions and made a number of recommendations to help avoid any potential damage to the environment.

- C&P played, and continues to play, an important role in the environmental assessment process for Atlantic Canada's offshore oil and gas development. The Canada/Newfoundland and Canada/Nova Scotia Offshore Petroleum Boards will use Environment Canada's advice, coordinated by C&P, to ensure that environmental problems are kept to a minimum. As a result, oil and gas production from the Grand Banks and Scotian Shelf can be carried out according to environmental protection plans now being developed.

- A federal Environmental Assessment Panel was appointed to hold a public hearing on a controversial NATO-sponsored Department of National Defence flight program in Labrador. A large number of low level jet fighter exercises held over important caribou habitat, and expansion of the Goose Bay air base are major aspects of this program. C&P recommended improvements to the draft environmental impact statement guidelines for the program. These changes will help ensure that the final assessment reports properly evaluate all major environmental issues.



Environmental Emergencies

The discharge of pollutants into the air or water, or onto land, can have serious consequences. This becomes an emergency when the discharge (or spill) is sudden, unexpected, and dangerous. The challenge is to limit the danger posed to the environment — including man. Rapid and effective response is essential, with the key to such response being good communications and contingency planning. To provide this kind of quick response, a 24-hour-a-day regional alerting and reporting system is maintained.

1986/87 Highlights:

- The accidental release of oil or toxic substances often threatens local, or even regional, resources. C&P, with other federal and provincial agencies, must act quickly and effectively to deal with these problems. Over the last fiscal year, C&P responded to over 1,000 emergencies. Though most were minor, some, such as the pesticide warehouse fire in Canning, N.S., were serious. Fortunately, due to fast and effective federal-provincial action, no long term hazards have been identified as a result of these incidents.

- Developing the offshore oil reserves of Atlantic Canada increases the possibility of harmful oil spills. It is therefore imperative that spills are detected and dealt with effectively. Special funding of $117,000 was obtained from the federal Department of Energy, Mines and Resources to support studies on methods for detecting oil discharges and sub-surface oil movement. Results from these investigations will allow industry, and government, to develop better ways of dealing with offshore spills.

- A program was established to record the location of federally owned underground storage tanks for fuel and other hazardous liquids. Several tanks in the region developed leaks that required emergency action. To help prevent leaks in the future, work began on a code of good practice for the design, installation, operation and abandonment of underground storage tanks.

- An action plan was developed with U.S. authorities to ensure a proper response in the event of an inland chemical spill near the international border. Staff also took part in a successful exercise to test the Canada-U.S. oil spill response plan.

- Proper training and good contingency plans are essential to an effective spill response strategy. Qualified C&P staff helped train over one thousand Atlantic Canadians in techniques for spill prevention and clean-up. Federal agencies were also instructed on the importance of having contingency plans, as well as appropriate ways to prepare and implement such plans. Operating procedures for the Regional Environmental Emergencies team were revised to reflect recent reorganizations of the main participating agencies. This team (REET) is composed of federal and provincial departments and agencies concerned with environmental emergencies,and is chaired by C&P.

- A co-operative project involving Environment Canada, the Canadian Coast Guard and the Newfoundland Department of Development and Tourism was arranged to identify important natural resources along the southern coast of Newfoundland. The next step is to determine the sensitivity of these resources to offshore oil development, in particular the transportation of oil along the coast.

Toxic Chemicals

C&P is carrying out a program of toxic chemical management designed to monitor the complete life cycle of toxic substances, from manufacture to their ultimate disposal as waste. The emphasis again is on prevention, rather than remedial action. This means promoting proper testing, usage, storage and disposal standards, maintaining inventories of chemicals in the region and investigating how such chemicals might threaten the environment, wildlife and/or human health.

1986/87 Highlights:

- Together with Health & Welfare Canada, and governments of the Atlantic Provinces, C&P is taking part in a four-year project designed to assess the relative safety of the region's drinking water supplies. In the second year of the study (86/87), a total of 16 surface and groundwater sources were sampled in Atlantic Canada. Although some discolouration problems associated with high iron and manganese concentrations were noted, nothing known to be harmful to human health was detected. The final report, due for release in 1989, will contain information useful to the continued supply of safe, high quality drinking water.

- When improperly handled, commercial chemicals, in particular polychlorinated biphenyls (PCBs), can seriously affect drinking water supplies and other important resources. Over the year, technical advice was provided to more than 250 industry and public sector representatives on proper handling practices.

- A consulting firm, retained by C&P, carried out a preliminary analysis of the risks to migratory bird populations from toxic industrial discharges in Atlantic Canada. Although results suggest risks are not high at present, there are some areas where further investigation would clearly be helpful.

- Pesticides are, by nature, toxic. They can have a negative impact on man and his environment. In 1986/87, C&P participated in a wide range of activities to track pesticide use, the impact of such chemicals on other organisms and their accumulation in the environment. Some examples: general pesticide accumulation surveys for the Wilmot, P.E.I. and Saint John, N.B. river basins; determination of aldicarb persistence in Prince Edward Island groundwater; a regional survey of agricultural pesticide use patterns; an evaluation of the environmental impacts of pulp and paper fungicide treatments; an assessment of the aquatic ecosystem effects of pyrethroid insecticides; and an overall determination of the impact of spruce budworm chemical control practices on forest songbird populations.

- Preventing problems rather than correcting them is a central philosophy of C&P. More than 100 industrial and commercial operations were inspected for the presence of toxic substances — primarily PCBs. When such materials were discovered, the owners were immediately advised of appropriate handling and storage techniques. In addition, each site was recorded in a computerized inventory system, to make it easier to carry out follow-up activities or respond to emergency events.

- C&P provides the chairperson for the Atlantic Region Pesticides Advisory Committee. In 1986/87, the Committee critically reviewed and requested appropriate safeguards for more than 75 large-scale pesticide use applications. Advice was also given to the province of Newfoundland on an effective monitoring system for their 1986 hemlock looper spray program.

Pollution Abatement

Pollutants are released into the environment from many sources. These sources include wastewater treatment plants, acid producing slate quarries or infills, industrial facilities, and neglected stores of garbage or industrial wastes. C&P encourages the adoption of cost-effective

treatment technologies to prevent the release of pollutants. Where treatment is no longer feasible, appropriate clean-up procedures are recommended, or enforcement action taken if warranted.

1986/87 Highlights:

- A long overdue modernization program is about to begin at the Sydney Steel Corporation (SYSCO) foundry in Sydney, N.S. The foundry is a major source of toxic substances and the modernization program presents an opportunity to design and install state-of-the-art air pollution and other control equipment. To make sure this is done, C&P is participating in the management committees controlling this multi-million dollar project.

- During many years of operation, and largely in the absence of environmental standards, a significant stockpile of toxic wastes has accumulated around the SYSCO site. Deposits of this material, known as the Tar Ponds, contain high amounts of hazardous polynuclear aromatic hydrocarbons (PAH). Mainly through the efforts of C&P, a cost sharing agreement was reached between the federal and provincial governments to clean up the Tar Pond area. The $34-million agreement, signed in 1986, provides for a comprehensive clean-up program estimated to require 10 years to complete. Environment Canada has committed $25 million to the project.

- Acid drainage which results from the disturbance of mineralized slates is a continuing problem in other areas of Nova Scotia as well. To help with this problem, C&P conducted a field mapping and sampling program of the main problem sites located throughout southwestern Nova Scotia. The maps and information report will allow developers to select low risk areas for quarries.

- The acid drainage phenomena resulted in an agreement with Transport Canada to start a $2-million acid drainage control program for the Halifax International Airport. The proposed treatment will ensure that streams around the site continue to recover from acidic conditions caused by the disturbance of mineralized slates in the area and uncontrolled drainage in the late 1960s and 1970s. This will ensure that any fish in the streams will be protected from harm.

- C&P personnel worked closely with federal officials to upgrade waste water treatment operations at several federal facilities in the region. Significant improvement was made in the quality of discharge from federal penitentiaries in Dorchester and Springhill, and at the Canadian Forces Base in Cornwallis.

- Of major importance are the development and implementation of waste management and environmental protection plans for federal defense and agricultural facilities in Atlantic Canada. In conjunction with federal and provincial agencies, protection plans for two defense bases in Newfoundland and the Agriculture Research Stations in the region have been devised.

Enforcement and Compliance

C&P administers a number of Acts which are the responsibility of the federal Minister of the Environment. While the legislation gives C&P broad powers of enforcement, use of the courts to solve problems is employed only as a last resort. Whenever possible, compliance is sought through negotiation and education. However, the options for court action are used where necessary. Maintaining environmental quality and continuing economic growth based on the use of natural resources are responsibilities which C&P takes very seriously.

1986/87 Highlights:

- Requests for permission to dispose of materials at sea are routinely evaluated by C&P. This is done to ensure that the proposed disposal method complies with the *Ocean Dumping Control Act* regulations. Ninety-three dumping permits were issued by C&P in 1986/87, all of which were carried out using acceptable environmental safety procedures.

- Air emission controls are often installed to meet standards specified under the federal *Clean Air Act* (CAA), administered by C&P. Regional secondary-lead smelters, chlor-

alkali plants and asbestos operations were found to be in full compliance with CAA regulations in 1986/87.

- Negotiation, rather than court action, led to the resolution of most environmental infractions in 1986/87. Notable areas of progress include: the Rio Algom tin mine; the Bowater, Consolidated Bathurst and Lake Utopia pulp mills; the Lake Georgia mine; the Belledune secondary-lead smelter; the Corner Brook pulp and paper mill; the McCain's food processing plant in Florenceville, and Terra Nova Fisheries Ltd. However, it was necessary to lay charges under section 33 of the *Fisheries Act*, against the N.B. Coal Company, Garden Province Meats Inc. (P.E.I.), and the Iron Ore Company of Canada. (The latter company was fined $25,000 and required to implement $300,000 worth of preventive modifications for a diesel oil spill into Lorraine Lake).

- In a move to streamline federal legislation, the Minister of the Environment recommended the creation of a *Canadian Environmental Protection Act*. A series of consultations was held with the public, industry and government, in order to provide the Minister with a clear idea of what Atlantic Canadians wanted to have included in this new Act.

- Violations of the federal lead-free gasoline regulations were kept to a minimum. The burning of low-lead or lead-free gasoline now results in much lower emissions of this toxic material than had been the case when leaded gas was common.

- *Migratory Bird Act* regulations were vigorously enforced in a continuing effort to ensure compliance with management measures. Special efforts in the goose wintering areas along the coasts of Nova Scotia saw violators receive fines of up to $2300. Enforcement efforts in the Acadian Peninsula of New Brunswick were not so successful. However, negotiations with the New Brunswick government resulted in amendment of provincial statutes which now work more in concert with federal regulations. This should help ensure better enforcement success in the future.

Acid Rain

Acid precipitation is one of the most serious environmental problem facing eastern North America. Acid precipitation, which includes snow, fog, and dust in addition to rain, begins when sulphur and nitrogen oxides are released into the air. Metal smelters and coal-fired generating stations are the major sources of sulphur dioxide, while automobiles are the major source of nitrogen oxides. Prevailing winds can carry such emissions hundreds of kilometres from their source. When these sulphur and nitrogen oxides combine with water vapour, the result is acid precipitation. The effects of acid precipitation depend on the amount of acid in the precipitation and the ability of the soil, water and rock formations to neutralize it. One serious impact in this region is that nine out of 27 salmon rivers in Nova Scotia can no longer support young salmon or trout. Buildings, bridges and other structures also suffer, as acid precipitation slowly erodes their stonework and concrete.

1986/87 Highlights:

- Agreements were signed between the federal government and the provinces of Prince Edward Island and Newfoundland on a planned reduction in the amount of sulphur dioxide (SO_2) being released to the atmosphere. Similar agreements with New Brunswick and Nova Scotia were under negotiation.

- Regional listings of SO_2-emitting power plants and foundries were updated. These listings will provide a starting point for assessing the effectiveness of SO_2 control measures.

- C&P staff collected, analyzed and reported on a variety of data in an effort to improve the overall understanding of acid rain as it occurs in Atlantic Canada. This task included assessment of long term trends in river water quality, snow pack quality, lake sediment chemistry, waterfowl population characteristics and the organization of freshwater biological communities. Much of the activity was centered on the Kejimkujik River basin of Nova Scotia, a national park area with many acid sensitive lakes and streams.

- In cooperation with the N.S. Department of Lands and Forests and the University of Sherbrooke, C&P mapped the acid precipitation sensitivity of major Nova Scotian landscape features. When used in combination with natural resource information, the acid sensitivity report and map provides useful background for regional planning and assessment of the acid rain problem.

Future Directions

This report would not be complete without a brief discussion of the further opportunities offered by the development of the new organization called Conservation and Protection. As an outward-looking organization, whose members

(CWS, EP and IWL) have traditionally achieved much of their success through co-operative arrangements and ventures. C&P is well positioned to lead Environment Canada's efforts to deal with a range of important environmental issues, such as water policy development, control of toxic substances, and hazardous waste management. C&P is prepared to assume a leadership role in a number of important areas: —

- **State of the Environment (SOE) Reporting:** The Atlantic Region of C&P already has considerable experience in reporting on our environmental quality (the 1979 and 1985 regional environmental quality reports). The resultant store of expertise, contacts, and information puts the Region in a good position to take advantage of a recent federal initiative in SOE reporting and to assume a leadership role.

- **The Environment-Economy Partnership:** The Atlantic Region has been able to effectively integrate environental and economic factors into a number of project decisions to the benefit of all (for example the Sydney Tar Ponds Clean-up). Additional opportunities in this area will continue to be explored as we seek to better appreciate the close associations between environmental quality and economic growth.

- **International Developments:** C&P is involved in several international ventures, ranging from participation in activities of the Canada-U.S. International Joint Commission, to co-operation with French wildlife enforcement officers on St. Pierre-Miquelon. During the coming years, we will take stock of our efforts in order to ensure that C&P is achieving the best possible impact on international events.

- **Relations with environmental groups:** C&P views environmental groups in Atlantic Canada, and elsewhere, as key allies in the effort to conserve and protect the valuable natural resources of our region. Our relations with these groups in the Atlantic Region has shown marked improvement over the last year. We will continue to provide them with a high level of co-operation, and support, in the years ahead.

- **Our Priorities for the Future:** C&P intends to address these and a number of other important issues over the next five years:

  - Enforcement of Section 33 of the federal *Fisheries Act*
  - *Canadian Environmental Protection Act*
  - Acid Rain
  - Management of toxic substances
  - Federal Water Policy
  - Wildlife (North American Waterfowl Mangement Plan, reserves, etc.)
  - Sydney Tar Ponds clean-up
  - Marine environmental quality
  - Improved communications with the public

One year's experience with C&P in the Atlantic Region has gone a long way towards confirming the sense and logic of C&P as a viable organization. We were able to achieve many of the internal objectives we set for ourselves without compromising our ability to deal effectively with on-going policies, issues and programs in a positive and productive way. Processes and structures have now been established through which we are learning more about each other and gaining mutual confidence. The administrative changes made so far should result in more rational spending decisions, greater efficiency in the implementation of programs, and broader career opportunities for our staff. These organizational improvements should be reflected in our ability to work towards a healthier environment, in a manner which emphasizes the anticipation and prevention of problems, before it is necessary to react and regulate.

Caring for our natural environment is a responsibility shared among various provincial and federal government agencies, private enterprises and the citizens of Atlantic Canada. With the creation of C&P, Environment Canada is better able to carry its portion of the load.

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Egalement disponible sous le litre *Conservation et Protection, Region de l'Atlantique, Rapport de l'Année Fiscale 86/87*

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English:
Cataloque # EN-40-11/11-1987 E
ISBN 0-662-15844-X

French:
Cataloque # EN-40-11/11-1987 F
ISBN 0-662-94646-4

Published by Authority of the
Minister of the Environment